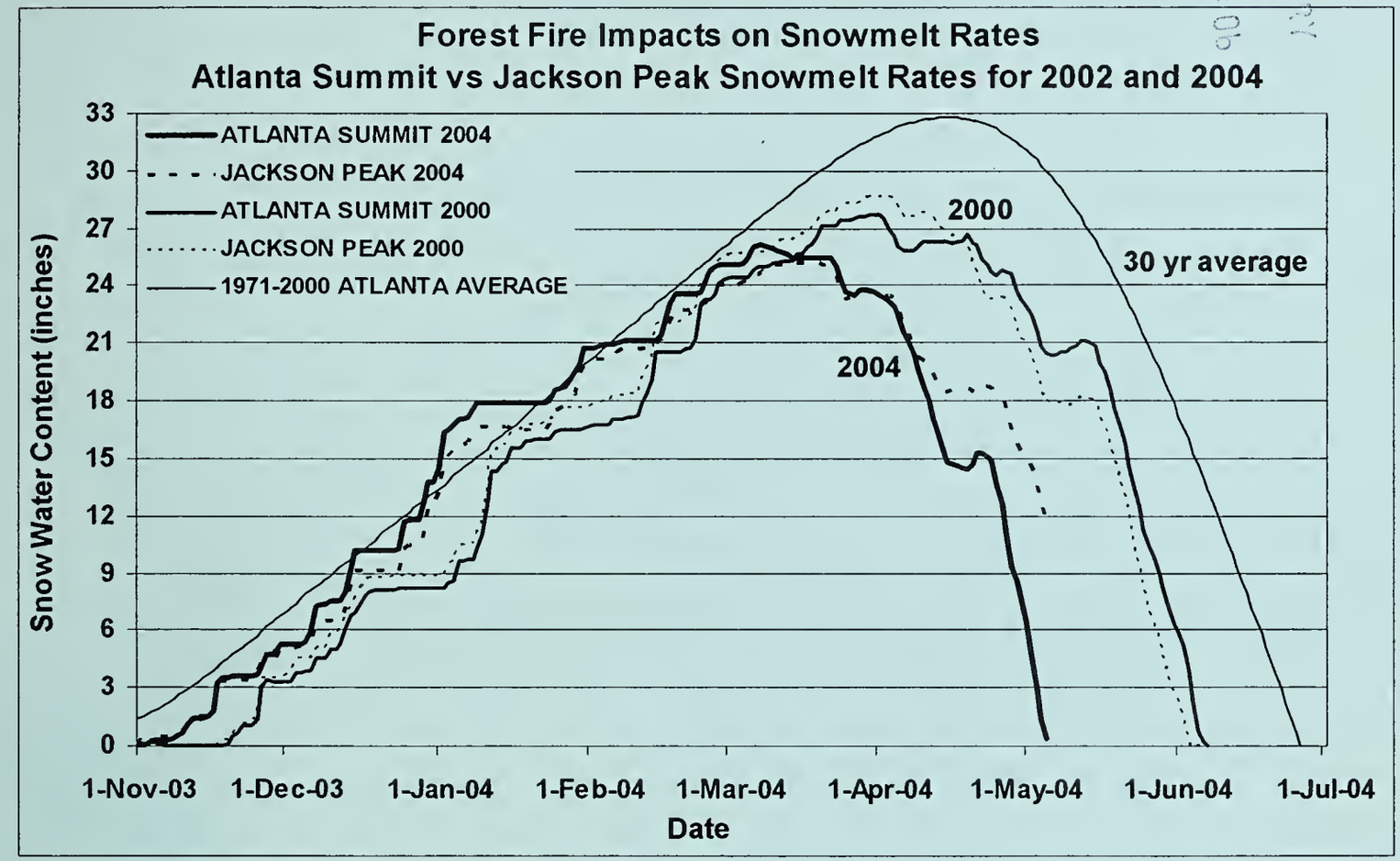
United States Department of Agriculture
Natural Resources Conservation Service

Idaho Water Supply Outlook Report May 1, 2004



In the year 2000, Atlanta Summit and Jackson Peak SNOTEL sites showed similar snowmelt rates and melt out dates as expected because they are in the same basin, at similar elevations and only 25 miles apart. However in 2004, the snow at Atlanta Summit melted at a significantly more rapid rate than the snow at Jackson Peak and it melted out nearly two full months earlier than the 30 year average melt out date. In early April, both sites held approximately 25 inches of snow water. By May 1st, Atlanta Summit held only 6.4 inches of snow water (2nd lowest value in last 55 years of data), whereas Jackson Peak still retained 15.2 inches. The difference in melt rates may be explained by a fire that burned much of the surrounding forest near the Atlanta Summit site and actually damaged some of the weather sensors in the summer of 2003. Previous years' fires across the state may have had similar effects on melt processes of local snowpacks resulting in more rapid melt and earlier melt out dates. Looking ahead to another dry summer and low water year, fire may play a large role in snow distribution and melt processes of the snowpack in years to come.

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http://www.id.nrcs.usda.gov/snow/

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

Idaho Water Supply Outlook Report
Revision Of Mailing List Or To Sign-Up For Report

The Idaho Water Supply Outlook Report is published and distributed as a public service by the USDA, Natural Resources Conservation Service from January to May each year. The June report is not mailed to recipients and is available via the Internet. In order to maintain current mailing information, control the cost of this publication and ensure maximum use of the information, we are required to examine our circulation annually. This notice is required by the congressional joint committee for the annual revision of free mailing lists.

The Idaho Water Supply Outlook Report is available on the Internet at http://www.id.nrcs.usda.gov/snow/ and allows you to obtain the Water Supply Outlook Report several days before you receive it in the mail. Additional water supply products and most current snowpack information are also available on the Internet.

Please mark the box [ ] for the BASIN REPORT you would like to receive. If you check more than one basin you will automatically receive the report for all basins.

[ ] G - General Outlook Report (mailed to all recipients) and Surface Water Supply Index (SWSI)

[ ] #1 - Panhandle Region

[ ] #2 - Clearwater River Basin

[ ] #3 - Salmon River Basin

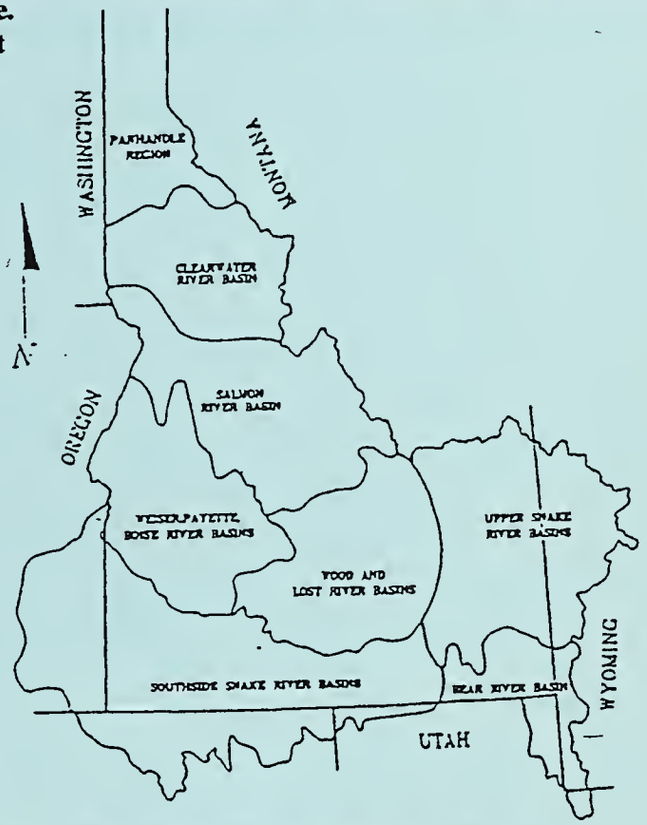
[ ] #4 - Weiser, Payette, Boise River Basins

[ ] #5 - Wood and Lost River Basins

[ ] #6 - Upper Snake River Basin

[ ] #7 - Southside Snake River Basins

[ ] #8 - Bear River Basin



[ ] - Annual Data Summary Report - published after each water year: contains individual snow course measurements, snow water equivalent and precipitation data from SNOTEL (SNOw TELemetry) stations, and the 1971-2000 averages.

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IDAHO WATER SUPPLY OUTLOOK REPORT

May 1, 2004

SUMMARY

The March and April weather was nice, but not normal. It has deteriorated Idaho's healthy snowpacks that were near average in early and mid-winter and are now well below average. Streamflow forecasts have mirrored the declining snow and decreased each month. Streamflow forecasts remain the lowest in the Bear River basin at 4% of average and are 20-50% in central Idaho. The highest are 70% of average for a few streams in northern Idaho. In some basins like the Boise and upper Snake, streamflow will be less than the past two years, but better than in 2001. However, the Big Lost basin may experience the lowest surface water supplies since the drought started four years ago unless conditions improve. This is not good news for Idaho's numerous water users that were hoping this year's encouraging snowfall would put a dent in the cumulative four year drought. The drought will continue for the fifth straight year in parts of Idaho and may be the driest year yet.

Moderate above normal mountainous temperatures in March and April gradually melted the snowpack, allowing snow measuring sites to lose a tenth to half an inch of snow water a day. These rates were slow enough to allow the melt water to infiltrate into the ground. This is good news and bad news, but really shows the dryness of soils. The water that went into the soil will be utilized at a future date as opposed to using it this year had the melt water reached the streams and reservoirs. There is still enough snow to generate another snowmelt peak in most higher elevation streams. The snowmelt peak flows will be of low magnitude and short duration, and then the streams will return to below normal baseflow levels for the rest of summer.

SNOWPACK

The remaining snowpack is the lowest at 25-35% of average in the lower elevation basins of Weiser, Mann, Rathdrum, Little Lost, Portneuf and Owyhee. The highest snowpacks are 73% of average in Priest and North Fork Clearwater basins. Elsewhere, snowpacks are 40-60% of average. The snowpack is about half of last year's in west-central and central Idaho, and about three-quarters of last year in eastern Idaho.

PRECIPITATION

The bad news is: April weather was the same as March -- dry with above normal temperatures. April precipitation was 50-70% of average across the state except for the basins south of the Snake River which received average precipitation amounts. When the March-April precipitation amounts are combined and analyzed against the 20+ years that NRCS has been collecting daily precipitation data, 27 out of 70 SNOTEL sites in Idaho set new record low amounts for the March-April period, and another 24 sites recorded their second lowest amounts. This is not good news for Idaho's numerous water users that rely on snowmelt fed streams, nor for the dryland farmers, forest and rangelands across the state.

RESERVOIRS

Reservoir storage is the highest along the western side of Idaho. Brownlee, Boise, Payette, and Dworshak reservoirs are all reporting above average storage. In contrast, Bear Lake remains nearly empty in terms of useable water at 23% of average. Bear Lake is not empty and contains over 5 million acre-feet of water that is not included as useable storage. On the other hand, Blackfoot Reservoir is nearly empty at 24% of average, the lowest April 30 storage since 1935. Salmon Falls, Oakley, Wildhorse, Jackson Lake and Magic reservoirs are storing half their average amounts. Owyhee and Mackay reservoir are about 70% of average, while Palisades Reservoir is 82% full. Henrys, Island Park, Grassy and Montpelier reservoirs are 85-90% of average. Some of these percentages sound encouraging, but with snowpacks that are about half of average in the high country and streams forecast well below average or near record low, reservoir releases will soon start exceeding inflows. Drafting of reservoirs will occur earlier than normal and many reservoirs will again be at their minimum storage levels later this summer.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and in some cases, dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

Streamflow forecasts decreased again from the previous month and are now near or record low in the Lemhi, Middle Fork Salmon, Big Lost and Little Lost basins. The lowest streamflow forecasts remain in the Bear River at 4% of average, basically, the same flow as last year. Streams projected at 20-55% of average include: upper Bear, Salmon, Deadwood, Boise, Big and Little Wood, Big and Little Lost, Greys, Salt, Willow, American Falls inflow, Oakley, Salmon Falls, Bruneau and Owyhee. Streams in the Clearwater basin and Snake River near Heise are forecast at 65% of average. The highest forecasts are at 70% of average for Priest, Dworshak Reservoir inflow and Kootenai River. Similar to the snow water content, snowmelt streamflow peaks will occur about three weeks earlier than normal. Snowmelt streamflow peaks have already occurred on the Owyhee, Weiser, Camas (Fairfield), lower Bear, and other lower elevation streams, while higher elevation streams still have one more chance to peak with the higher elevation snowpacks.

Idaho's Surface Water Supply Index (SWSI) are also showing how severe and low the water supplies will be this year. Four basins: Salmon, Big Lost, Little Lost, Snake above Heise, and Bear are at or below a value of -3.4. A value of -3.9 is the driest for the period of record. The 1971 to present period is used in the SWSI analysis for most basins. For additional information, see following SWSI table.

Previously the SWSI was only updated during the planning season January – May. Starting this year, this index will be updated the beginning of each month throughout the summer because of increased interest it its ability to monitor drought conditions. The monthly values will be posted on the Idaho NRCS Snow Survey Water Supply web page under 'Drought and Surface Water Supply Index' at this address: http://www.id.nrcs.usda.gov/snow/watersupply/swsi-main.html Numerous graphs are available for users to access and visualize the wet and dry cycles for their basin of interest.

RECREATION

Enjoy the higher streamflows now because they will not last. There is still enough snow to generate another snowmelt peak in the higher elevations, but the magnitude and duration will be short. Then the streams will return to below normal baseflow levels for the rest of summer. Drafting of reservoirs will occur earlier than normal as demands for water exceed inflows. Most reservoirs will be at their minimum storage levels, which are becoming more common, before summer's end.

FOREST FIRE IMPACTS ON SNOWMELT RATES

In the year 2000, Atlanta Summit and Jackson Peak SNOTEL sites showed similar snowmelt rates and melt out dates as expected because they are in the same basin, at similar elevations and only 25 miles apart. However in 2004, the snow at Atlanta Summit melted at a significantly more rapid rate than the snow at Jackson Peak and it melted out nearly two full months earlier than the 30 year average melt out date. In early April, both sites held approximately 25 inches of snow water. By May 1st, Atlanta Summit held only 6.4 inches of snow water (2nd lowest value in last 55 years of data), whereas Jackson Peak still retained 15.2 inches. The difference in melt rates may be explained by a fire that burned much of the surrounding forest near the Atlanta Summit site and actually damaged some of the weather sensors in the summer of 2003. Previous years' fires across the state may have had similar effects on melt processes of local snowpacks resulting in more rapid melt and earlier melt out dates. Looking ahead to another dry summer and low water year, fire may play a large role in snow distribution and melt processes of the snowpack in years to come.

IDAHO SURFACE WATER SUPPLY INDEX (SWSI) As of May 1, 2004

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

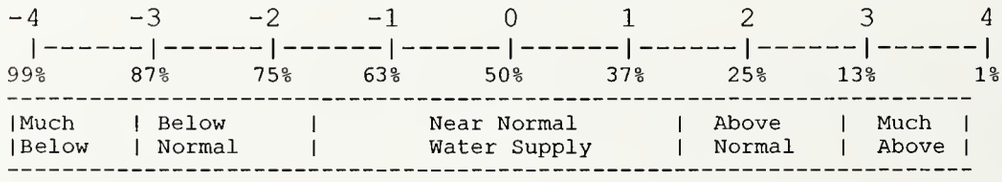
SWSI values are published January through May and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

US National Weather Service
US Bureau of Reclamation
Idaho Water Users Association
US Army Corps of Engineers
Idaho Dept. of Water Resources
PacifiCorp

BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
PANHANDLE	-2.3	1988	NA
CLEARWATER	-2.1	2000	NA
SALMON	-2.6	1990	NA
WEISER	-2.7	2001	NA
PAYETTE	-2.0	1991	NA
BOISE	-2.0	2002	-2.1
BIG WOOD	-2.5	2002	-1.0
LITTLE WOOD	-1.7	2000	-2.0
BIG LOST	-3.9	1992	-0.5
LITTLE LOST	-3.9	1994	0.0
HENRYS FORK	-2.2	1991	-3.3
SNAKE (HEISE)	-3.4	2002	-2.0
OAKLEY	-2.9	1990	-1.0
SALMON FALLS	-2.9	1991	-1.0
BRUNEAU	-2.9	2000	NA
BEAR RIVER	-3.9	2003	-3.8

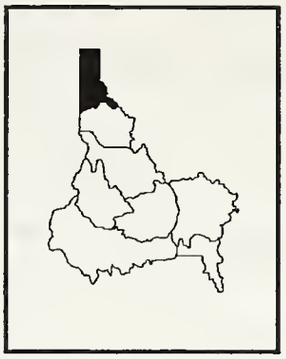
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

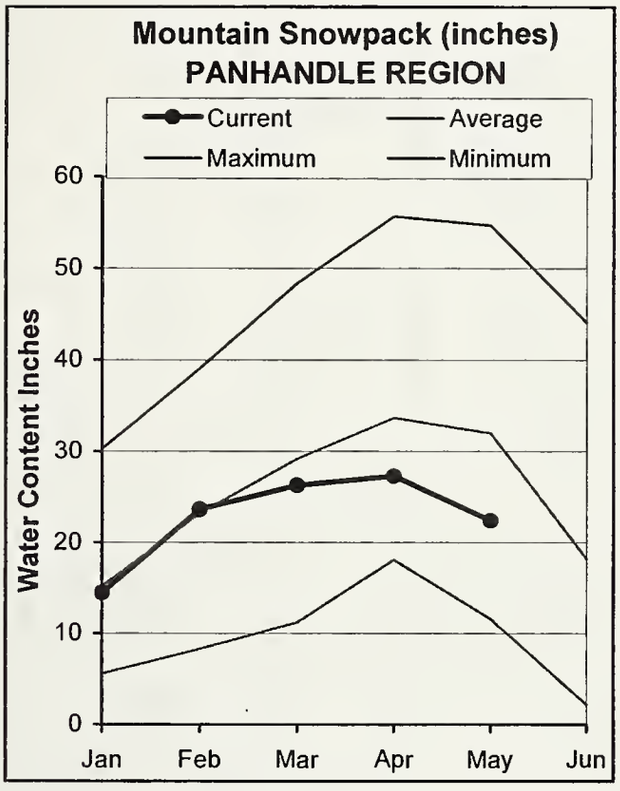


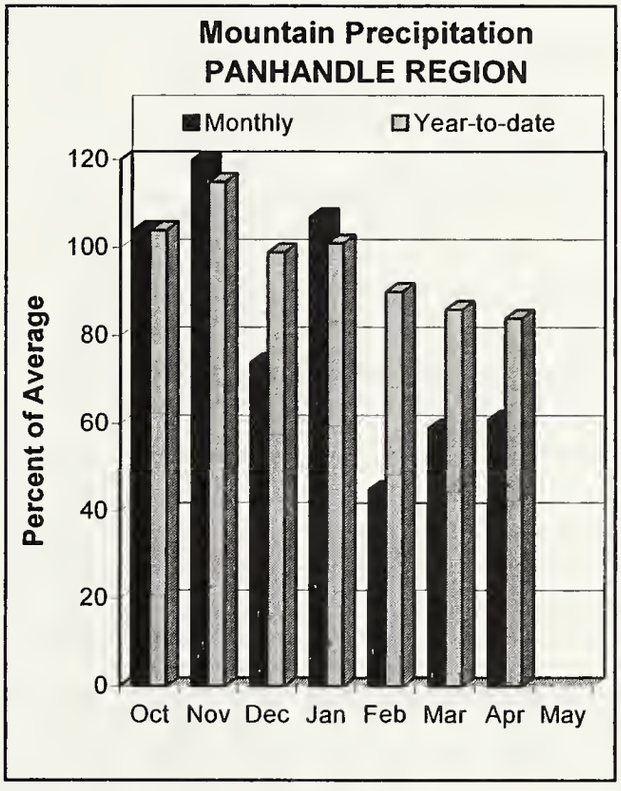
NA = Not Applicable

Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

PANHANDLE REGION
MAY 1, 2004







WATER SUPPLY OUTLOOK

April continued where March ended with precipitation that was only 61% of average for the second month in a row, and the third consecutive month with below average precipitation. The snowpack in most basins is about two-thirds of average. The Coeur d'Alene basin, which is 71% of average, is one of the few basins in the state with a better snowpack this year than last year. This is because the snowpack was only 54% of average last year. Other basins have the least snow since 2001. Water year to date precipitation is 84% of average, compared to 89% a year ago. Water users can expect water supplies to be less than last year. Streamflow runoff volumes were about 65% of the May-July average in the Moyie and Coeur d'Alene rivers last year and are forecast at 55-65% of average this year. The snow water content peaked a month early this year and moderate temperatures allowed the snow to dribble out of the pack and much was absorbed by the dry soils. Water users should plan for runoff volumes less than last year, summer baseflow levels occurring earlier than normal and remaining below normal during the normally dry summer months.

PANHANDLE REGION
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	MAY-JUL	3740	4260	4500	73	4740	5260	6170
	MAY-SEP	4490	5070	5340	74	5610	6190	7250
MOYIE RIVER at Eastport	MAY-JUL	170	195	215	65	235	260	330
	MAY-SEP	175	205	225	65	245	275	345
SMITH CREEK	MAY-JUL	51	62	69	66	76	87	104
	MAY-SEP	52	65	73	66	81	94	111
BOUNDARY CREEK	MAY-JUL	54	63	70	69	77	86	102
	MAY-SEP	58	68	75	69	82	92	108
CLARK FK at Whitehorse Rpds (1,2)	MAY-JUL	4320	5560	6130	64	6700	7940	9590
	MAY-SEP	4910	6300	6930	65	7560	8950	10700
PEND OREILLE Lake Inflow (2)	MAY-JUL	5140	6040	6650	63	7260	8160	10600
	MAY-SEP	5800	6800	7480	63	8160	9160	11800
PRIEST near Priest River (1,2)	MAY-JUL	315	390	425	69	460	535	615
	MAY-SEP	325	420	460	69	500	595	670
COEUR D'ALENE at Enaville	MAY-JUL	155	225	275	63	325	395	440
	MAY-SEP	180	255	305	64	355	430	480
ST. JOE at Calder	MAY-JUL	375	460	515	61	570	655	845
	MAY-SEP	410	495	555	61	615	700	910
SPOKANE near Post Falls (2)	MAY-JUL	650	880	1040	62	1200	1430	1670
	MAY-SEP	690	935	1100	62	1270	1510	1770
SPOKANE at Long Lake (2)	MAY-JUL	810	1080	1260	66	1440	1710	1910
	MAY-SEP	940	1220	1410	66	1600	1880	2130

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2828.0	2668.0	1954.8
FLATHEAD LAKE	1791.0	1218.0	1206.0	931.9
NOXON RAPIDS	335.0	307.9	319.7	272.3
PEND OREILLE	1561.3	934.5	925.5	916.7
COEUR D'ALENE	238.5	156.5	159.9	249.7
PRIEST LAKE	119.3	101.5	104.1	102.5

PANHANDLE REGION
Watershed Snowpack Analysis - May 1, 2004

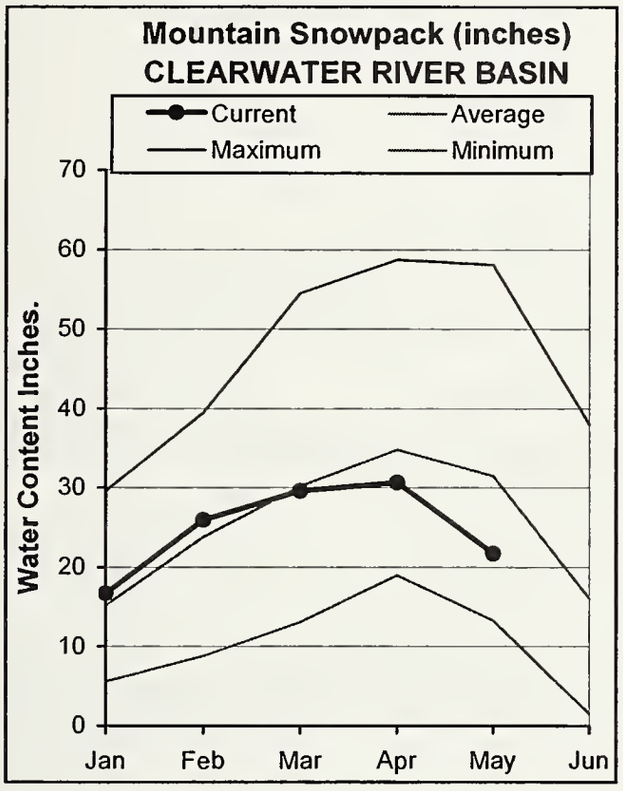
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	31	78	66
Moyie River	11	79	66
Priest River	5	79	69
Pend Oreille River	91	71	64
Rathdrum Creek	1	81	38
Hayden Lake	0	0	0
Coeur d'Alene River	7	133	71
St. Joe River	4	84	63
Spokane River	10	114	66
Palouse River	1	0	0

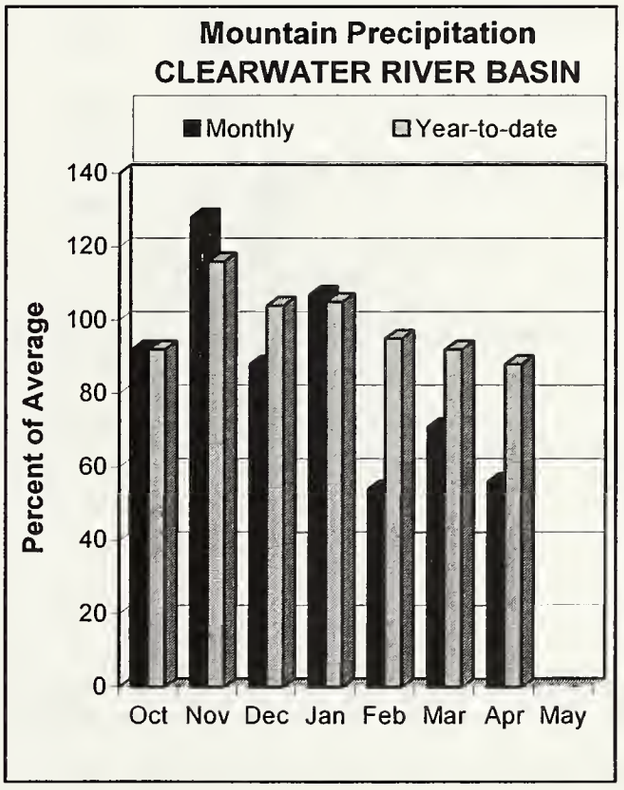
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

CLEARWATER RIVER BASIN
MAY 1, 2004





WATER SUPPLY OUTLOOK

April precipitation was only 56% of average, even less than the 71% of average received in March. Mountainous precipitation amounts ranged from 1.4 - 3.5 inches; normals range from 3-6 inches for April in the Clearwater basin. Water year to date precipitation sounds encouraging at 88% of average, but timing and intensity of the precipitation also determines how much infiltrates into the ground or runs off. The highest snowpack is in the North Fork Clearwater River basin at 73% of average, about three-quarters of last year's snowpack. The Selway and Locsha basin snowpacks are 55% of average, half of last year. Overall, the Clearwater River basin snowpack is 68% of average, 71% of last year. Dworshak Reservoir is 80% full, which is above average. Dworshak Reservoir inflow forecast is for 69% of average. The Selway and Lochsa river basins are forecast at 66% of average for the May-July period. There is enough remaining snow to see another rise in these streams in May, but it will not last long with below average snow in the high country. Then, the rivers will drop to below normal baseflow levels for the remaining dry summer months. River runners and water users should plan accordingly for the reduced streamflow volume projections. This year's runoff volumes will be much less than the 80-97% of average volumes observed last year.

CLEARWATER RIVER BASIN
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SELWAY near Lowell	MAY-JUL	890	1030	1120	65	1210	1350	1720
	MAY-SEP	940	1090	1190	65	1290	1440	1830
LOCHSA near Lowell	MAY-JUL	710	795	855	68	915	1000	1250
	MAY-SEP	750	840	905	68	965	1055	1330
DWORSHAK RESV INFLOW (1,2)	MAY-JUL	880	1200	1350	69	1500	1820	1970
	MAY-SEP	980	1320	1470	69	1620	1960	2130
CLEARWATER at Orofino (1)	MAY-JUL	1890	2320	2520	68	2720	3150	3730
	MAY-SEP	2010	2480	2700	68	2920	3390	3990
CLEARWATER at Spalding (1,2)	MAY-JUL	2780	3520	3860	67	4200	4940	5770
	MAY-SEP	3010	3810	4170	67	4530	5330	6190

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	2787.3	2926.7	2421.3

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - May 1, 2004

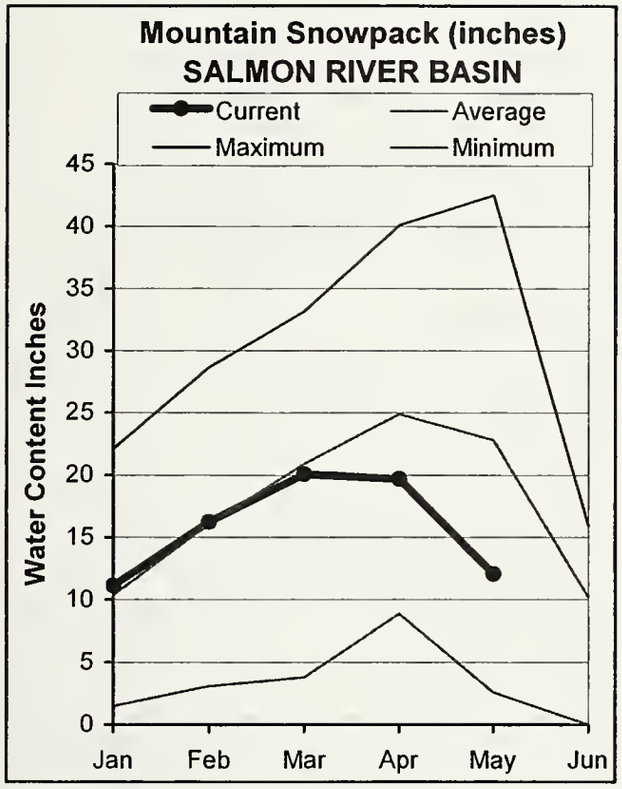
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	8	79	73
Lochsa River	2	52	56
Selway River	4	48	54
Clearwater Basin Total	14	71	68

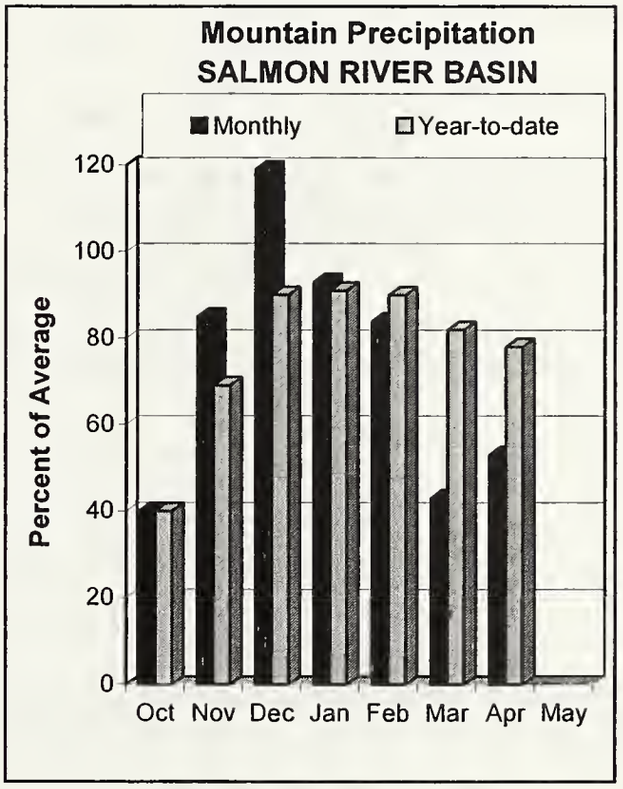
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SALMON RIVER BASIN
MAY 1, 2004





WATER SUPPLY OUTLOOK

April precipitation was similar to amounts received last month at only 53% of average. The lowest amounts were 42% of average around McCall, Deadwood Summit and North Fork area. Water year to date precipitation is one of the lowest in the state at 78% of average; last year it was normal. Snowpacks are about half of average and less than half of last year. The Middle Fork Salmon basin snowpack is 46% of average, only slightly better than in 2001. The Middle Fork Salmon River is forecast at 42% of the May-July period, and will be less than the past two seasons and similar to the 2001 flows. Additional peak flows on the Lemhi River are unlikely or will not last for long as the snow is half of average, soils are dry and streams are low. The Lemhi River residual streamflow forecast is for 37% of average, which is a record low amount for the May-July period. Overall, the Salmon basin snowpack is 51% of average, down from 77% of average a month ago and only slightly better than 2001. This is the fifth lowest May 1 snowpack since 1982. The Salmon River at White Bird is forecast at 57% of average for the May-September period, which maybe optimistic because of the dry March and April, low streamflows in the Lemhi, and cumulative drought effects. There is still enough snow for one more snowmelt peak on the Middle Fork Salmon River and other higher elevation tributaries along the main Salmon River. The snowmelt peaks will be in early to mid-May and then return to below normal baseflow levels for the rest of the summer. River runners and water users should plan accordingly for the low summer streamflow conditions.

SALMON RIVER BASIN
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	MAY-JUL	349	370	385	51	425	510	760
	MAY-SEP	419	444	460	51	505	600	900
Lemhi River nr Lemhi	MAY-JUL	17.4	22	26	37	30	36	70
	MAY-SEP	23	29	33	37	38	45	89
MF Salmon at MF Lodge	MAY-JUL	180	249	295	42	341	410	700
	MAY-SEP	199	277	330	42	383	461	785
SALMON at White Bird (1)	MAY-JUL	2724	2859	2950	57	3190	3720	5150
	MAY-SEP	3032	3192	3300	57	3570	4170	5780

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN
Watershed Snowpack Analysis - May 1, 2004

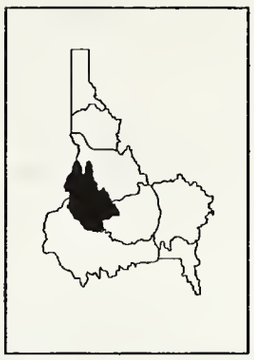
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	8	41	43
Lemhi River	7	49	50
Middle Fork Salmon River	3	44	46
South Fork Salmon River	3	54	56
Little Salmon River	4	42	55
Salmon Basin Total	24	47	51

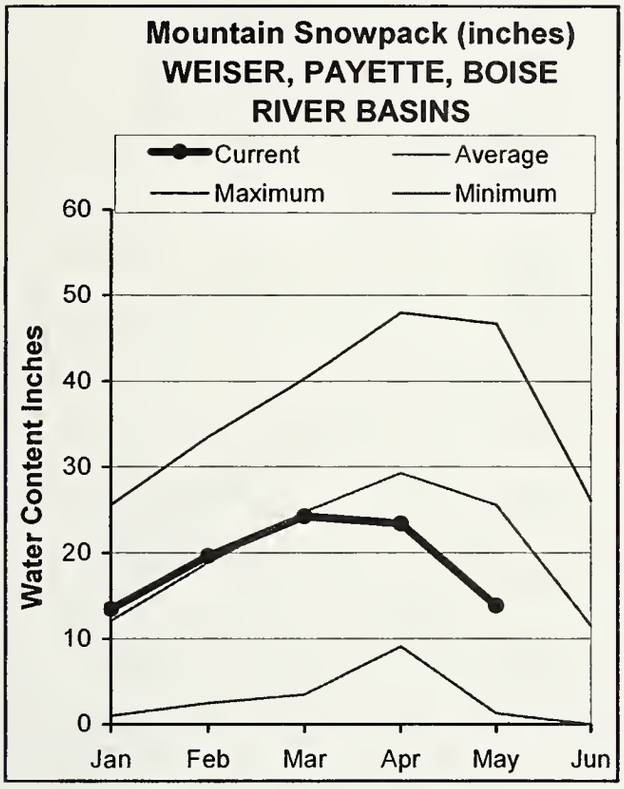
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

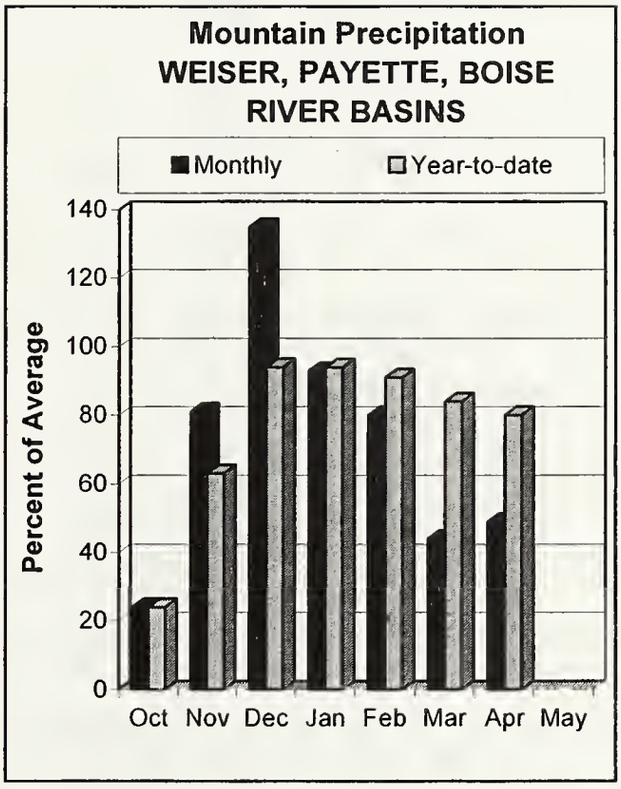
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS MAY 1, 2004







WATER SUPPLY OUTLOOK

April precipitation was only 49% of average. Water year to date precipitation is 80% of average, down from 84% last month, and also less than last year. Moderate temperatures in March and April gradually melted the snowpack, losing half an inch of snow water per day. These rates were slow enough to allow the melt water to infiltrate into the ground. This is good news and bad news and it shows how dry the soils are. The water will be used at a future date as opposed to using it this year if the water had reached the streams and reservoirs. The remaining snow is about half of average in the Boise and Payette basins and 25% of average in Weiser and Mann basins. The Boise and Payette reservoirs systems are 76% of full, 114% of average. The Boise system will not fill with a streamflow forecast at only 53% of average. Water supplies will be marginally adequate and shortages could occur if the minimum streamflow forecasts occur. Shortages are not expected for Payette water users even with the Payette River near Horseshoe Bend forecast at only 54% of average, but supplies could be similar to the 2001 season if the minimal forecasts occur. With the Weiser River basin snowpack the lowest since 1994 the residual streamflow forecast is for 40% of average and is not looking very promising for the Weiser River water users.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WEISER near Weiser (1)	MAY-JUL	71	90	103	40	135	205	255
	MAY-SEP	81	101	115	40	150	225	285
SF PAYETTE at Lowman	MAY-JUL	163	188	205	54	220	245	380
	MAY-SEP	190	215	235	54	255	280	435
DEADWOOD RESERVOIR Inflow (1,2)	MAY-JUL	44	59	66	57	73	88	116
	MAY-SEP	48	64	71	57	78	94	125
LAKE FORK PAYETTE near McCall	MAY-JUL	35	41	45	59	49	55	76
	MAY-SEP	37	43	47	60	51	57	79
NF PAYETTE at Cascade (1,2)	MAY-JUL	134	200	230	58	260	325	395
	MAY-SEP	150	225	255	59	285	360	435
NF PAYETTE nr Banks (2)	MAY-JUL	175	240	280	55	320	385	505
	MAY-SEP	190	260	305	56	350	420	550
PAYETTE nr Horseshoe Bend (1,2)	MAY-JUL	445	615	690	54	765	935	1290
	MAY-SEP	500	680	765	54	850	1030	1430
BOISE near Twin Springs (1)	MAY-JUL	215	275	300	59	325	385	510
	MAY-SEP	240	305	335	59	365	430	565
SF BOISE at Anderson Ranch Dam (1,2)	MAY-JUL	125	190	220	51	250	315	430
	MAY-SEP	134	205	235	51	265	335	465
MORES CREEK near Arrowrock Dam	MAY-JUL	11.0	22	30	38	38	49	79
	MAY-SEP	13.0	25	33	39	41	53	85
BOISE near Boise (1,2)	MAY-JUL	370	510	575	53	640	780	1080
	MAY-SEP	420	570	640	54	710	860	1190

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	11.0	11.1	10.5
CASCADE	693.2	537.6	545.8	462.5
DEADWOOD	164.0	107.5	78.9	103.4
ANDERSON RANCH	450.2	367.9	208.4	302.3
ARROWROCK	272.2	190.8	207.3	180.9
LUCKY PEAK	293.2	223.4	211.0	207.9
LAKE LOWELL (DEER FLAT)	165.2	125.0	116.9	141.5

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - May 1, 2004

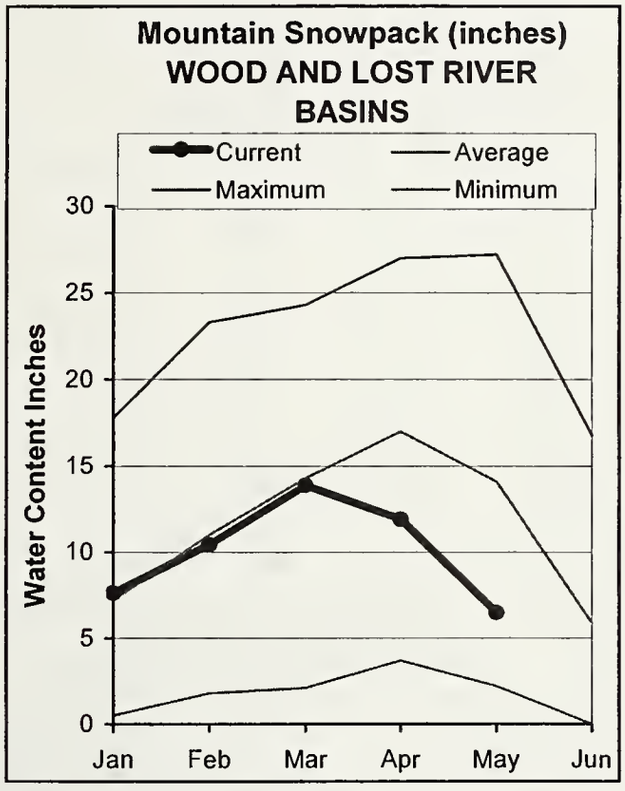
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	1	39	27
Weiser River	3	23	25
North Fork Payette	8	45	51
South Fork Payette	5	49	49
Payette Basin Total	14	47	51
Middle & North Fork Boise	5	57	52
South Fork Boise River	7	54	51
Mores Creek	4	75	59
Boise Basin Total	13	58	52
Canyon Creek	1	0	0

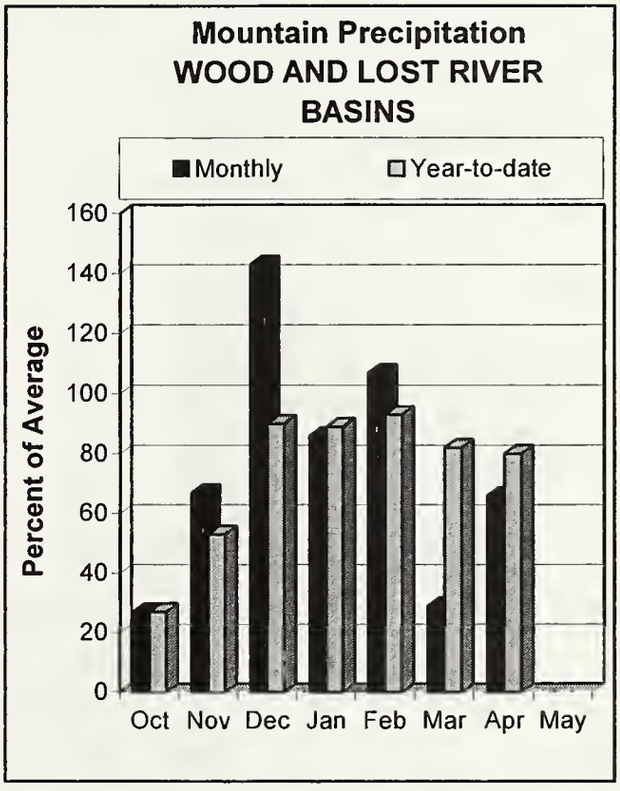
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WOOD and LOST RIVER BASINS
MAY 1, 2004





WATER SUPPLY OUTLOOK

Lack of precipitation in March and April combined with above average temperatures deteriorated the healthy looking snowpack in Idaho's central mountains. April precipitation was 66% of average in these basins, but many stations record their lowest March–April total precipitation for the 20+ years that NRCS has collected daily SNOTEL precipitation data. Water year to date precipitation decreased to 80% of average, even less than last year at this time. Snowpacks are half of average in Big Wood above Hailey and Birch-Medicine Lodge basins. The Big Lost snowpack is 44% of average, same as in 2001. Little Lost basin snowpack is 37% of average, lowest since 1994. Little Wood basin snowpack is 30% of average, same as in 2001. Magic Reservoir increased to 40% full, half of average, but with the residual streamflow forecast at only 32% of average, there is not much more water to melt from the snowpack. Mackay Reservoir is 58% full, slightly better than last year. Inflow forecast is for 35% of average; last year's runoff was 48% of average. This is the third lowest runoff volume since 1926, only 1934 and 1937 had less runoff. The Little Lost River is forecast at only 40% of average, a record low amount since the data started in 1959. The early and encouraging snowfall this winter, turned sour and the four year drought will now become a five year drought in these central basins and surface water supplies may be the lowest yet.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BIG WOOD at Hailey (1)	MAY-JUL	62	90	104	46	119	156	225
	MAY-SEP	73	104	120	46	137	178	260
BIG WOOD near Bellevue	MAY-JUL	12.0	25	37	23	51	75	163
	MAY-SEP	15.0	29	41	23	55	80	176
CAMAS CREEK near Blaine	MAY-JUL	1.5	5.0	8.6	20	13.2	22	43
	MAY-SEP	1.5	5.0	8.6	20	13.2	22	44
BIG WOOD below Magic Dam (2)	MAY-JUL	43	57	66	32	96	140	205
	MAY-SEP	53	64	71	32	102	148	220
LITTLE WOOD R ab High Five Ck	MAY-JUL	15.6	21	25	43	29	37	58
	MAY-SEP	17.4	23	28	43	33	41	65
LITTLE WOOD near Carey (2)	MAY-JUL	20	24	27	44	34	45	62
	MAY-SEP	23	28	31	44	39	51	70
BIG LOST at Howell Ranch	MAY-JUL	56	61	65	40	75	89	162
	MAY-SEP	64	70	74	40	85	102	186
BIG LOST below Mackay Reservoir (2)	MAY-JUL	37	42	45	35	55	69	130
	MAY-SEP	48	53	56	35	66	82	161
LITTLE LOST blw Wet Creek	MAY-JUL	8.6	9.9	10.8	40	13.4	17.4	27
	MAY-SEP	10.8	12.7	14.0	40	18.0	23	35

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	76.1	57.6	150.4
LITTLE WOOD	30.0	29.5	26.7	24.3
MACKAY	44.4	25.8	23.9	34.6

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - May 1, 2004

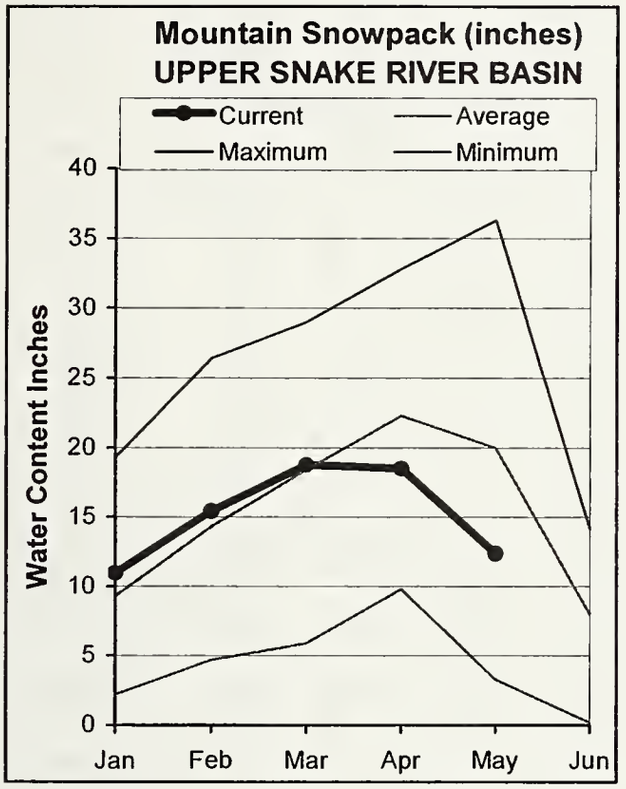
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey	7	47	51
Camas Creek	3	0	0
Big Wood Basin Total	10	46	46
Fish Creek	0	0	0
Little Wood River	4	27	30
Big Lost River	4	43	44
Little Lost River	3	40	37
Birch-Medicine Lodge Cree	2	48	50
Camas-Beaver Creeks	2	83	65

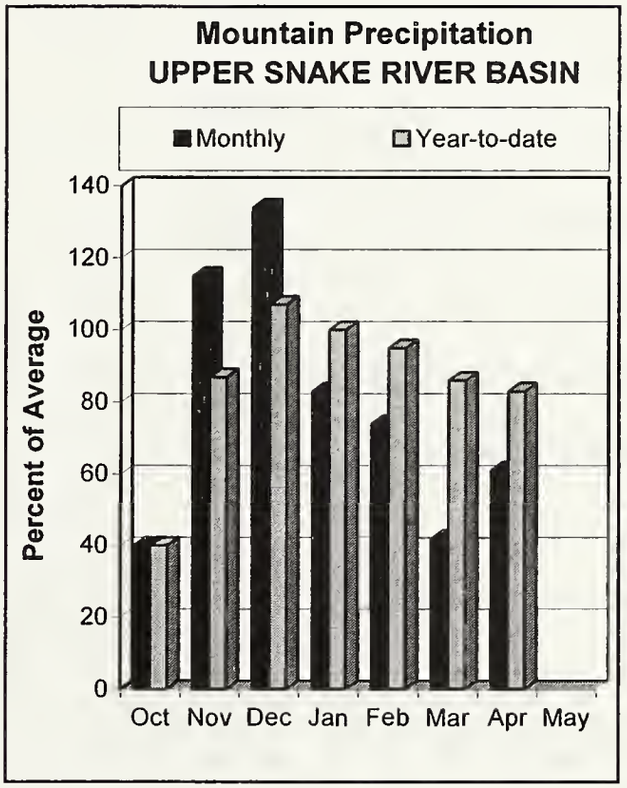
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

UPPER SNAKE RIVER BASIN
MAY 1, 2004





WATER SUPPLY OUTLOOK

April mountainous precipitation was 61% of average, ranging from 35% in Island Park area to 85% in Yellowstone National Park. Water year to date precipitation is 83% of average. Surprisingly, this is the same as last year at this time, but the snowpack is only 40-60% of average and 70-80% of last year. The Henrys Fork continues to host the highest snowpack in the region at 63% of average and the lowest are in the Portneuf and Salt basins at 35-40%. The Snake above Palisades Reservoir snowpack is 54% of average, 71% of last year. The Snake River near Heise is forecast at 64% of average for the May-September period; last year the flow was 67% of average. Surface water supplies will be less than last year, unless precipitation changes for the better. Surface irrigation supplies will be less than 2003, may be similar to 2002 and hopefully better than 2001. If the minimum streamflow forecasts occur (90 or 70 Percent Chance of Exceedance) would put this year's surface water supplies (combined reservoir and streamflow) even less than the 2001 season. Water users should be prepared for shortages; severity depends upon your water right or supplement water to finish the irrigation season. The minimum streamflow forecasts could occur because of the cumulative drought effects or with continued below average precipitation for the next month or two.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK near Ashton (2)	MAY-JUL	235	280	310	69	340	385	450
	MAY-SEP	355	410	445	69	480	535	645
HENRYS FORK near Rexburg (2)	MAY-JUL	815	920	990	74	1060	1160	1330
	MAY-SEP	1110	1230	1310	74	1390	1510	1780
FALLS near Squirrel (1,2)	MAY-JUL	179	225	245	72	265	310	340
	MAY-SEP	230	275	295	72	315	360	410
TETON near Driggs	MAY-JUL	72	87	97	68	107	122	143
	MAY-SEP	97	116	128	68	140	159	188
TETON near St. Anthony	MAY-JUL	200	230	250	70	270	300	355
	MAY-SEP	245	280	305	70	330	365	435
SNAKE near Moran (1,2)	MAY-JUL	395	475	510	68	545	625	750
	MAY-SEP	445	530	570	68	610	695	840
PACIFIC CREEK at Moran	MAY-JUL	81	97	108	68	119	135	160
	MAY-SEP	85	102	113	68	124	141	167
SNAKE above Palisades (2)	MAY-JUL	1290	1410	1490	69	1570	1690	2160
	MAY-SEP	1480	1620	1720	68	1820	1960	2530
GREYS above Palisades	MAY-JUL	121	142	157	52	172	192	300
	MAY-SEP	146	171	186	52	201	226	355
SALT near Etna	MAY-JUL	71	105	128	46	151	186	280
	MAY-SEP	103	141	166	46	191	231	360
PALISADES RESERVOIR INFLOW (1,2)	MAY-JUL	1520	1790	1920	64	2050	2320	2980
	MAY-SEP	1800	2120	2260	64	2400	2720	3520
SNAKE near Heise (2)	MAY-JUL	1700	1900	2040	64	2180	2380	3170
	MAY-SEP	2030	2260	2420	64	2580	2810	3760
WILLOW CREEK nr Ririe (2)	MAY-JUL	8.6	12.4	15.4	26	18.7	24	60
BLACKFOOT RESV INFLOW	MAY-JUN	16.0	31	42	49	53	68	86
SNAKE nr Blackfoot (1,2)	MAY-JUL	2130	2590	2790	68	2990	3450	4130
	MAY-SEP	2810	3270	3470	68	3670	4130	5140
PORTNEUF at Topaz	MAY-JUL	20	27	32	49	37	44	65
	MAY-SEP	32	37	41	49	45	50	84
AMERICAN FALLS RESV INFLOW (1,2)	MAY-JUL	205	850	1150	44	1450	2100	2640
	MAY-SEP	335	980	1280	44	1580	2230	2910

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of April

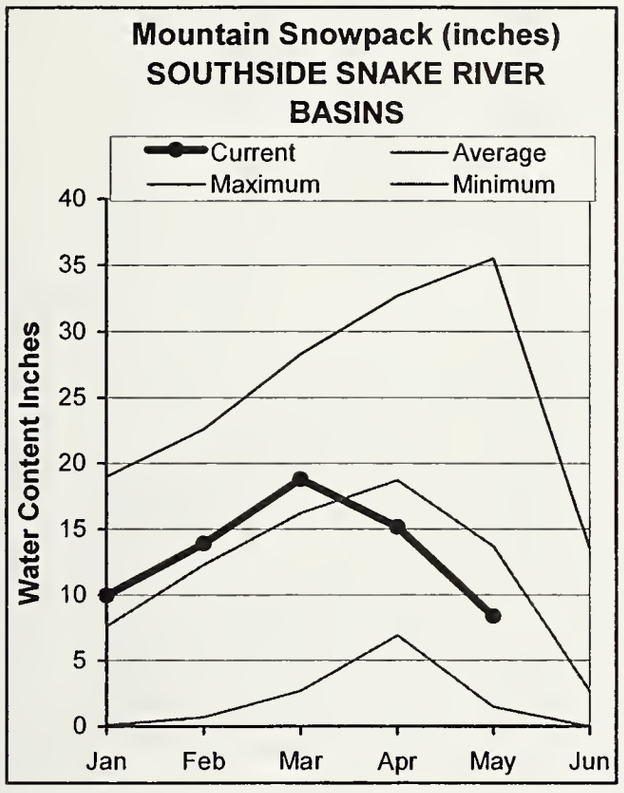
Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	73.3	75.5	87.4
ISLAND PARK	135.2	114.3	114.1	123.2
GRASSY LAKE	15.2	10.5	13.3	12.7
JACKSON LAKE	847.0	259.6	342.7	471.1
PALISADES	1400.0	710.4	759.4	862.6
RIRIE	80.5	44.5	45.7	56.2
BLACKFOOT	348.7	61.6	91.6	256.3
AMERICAN FALLS	1672.6	1163.2	1324.8	1493.8

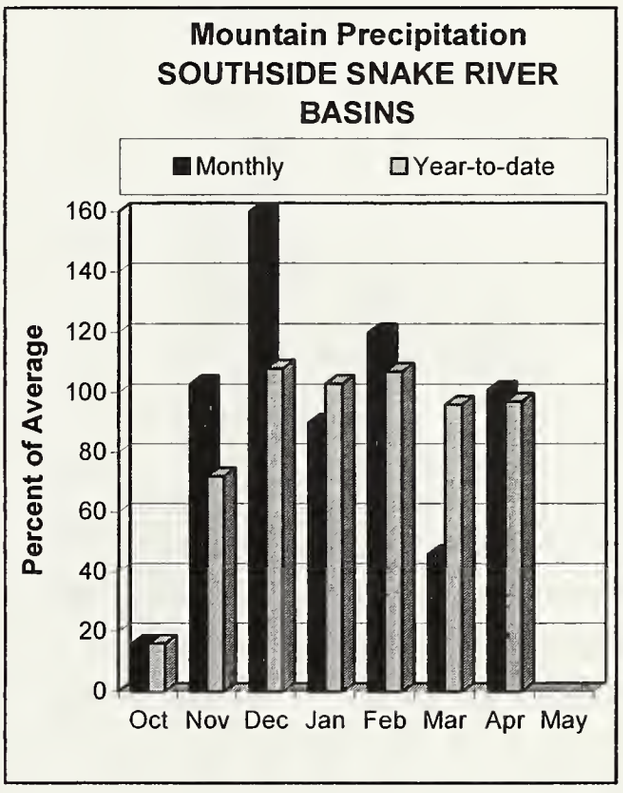
UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - May 1, 2004

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Henrys Fork-Falls River	10	84	64
Teton River	8	80	62
Henrys Fork above Rexburg	18	83	63
Snake above Jackson Lake	6	68	58
Gros Ventre River	3	76	59
Hoback River	5	78	54
Greys River	5	77	59
Salt River	5	70	40
Snake above Palisades	24	71	54
Willow Creek	7	115	50
Blackfoot River	3	0	0
Portneuf River	6	142	35
Snake abv American Falls	43	79	55

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table. The average is computed for the 1971-2000 base period.
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS
MAY 1, 2004





WATER SUPPLY OUTLOOK

The basins south of the Snake River received the highest precipitation in April in the state average, but it was only average and nothing to brag about. Timing and intensity of spring precipitation can and does make a difference in the benefits it provides. Several quarter inch storms over a four week period may just be enough to wet the surface or settle the dust, while greater precipitation amounts in a shorter time period would provide additional moisture to runoff and reach the streams. The remaining snow is 35% of average in the Owyhee, 52% in Bruneau, 56% in Salmon Falls and 60% in Oakley basins. Reservoir storage is half of average in Salmon Falls, Oakley and Wildhorse reservoirs. Owyhee Reservoir is 68% of average and will provide adequate irrigation supplies even with the residual forecast at 38% of average. Salmon Falls Creek is forecast at 35% of average, and should provide slightly better irrigation supplies than last year, but supplies will only equal last year if the minimum forecast occurs. Oakley Reservoir inflow is forecast at 28% of average which would provide irrigation supplies slightly better than last year. Supplies will be less than last year if the minimum streamflow forecast occurs and remaining snow does not produce much of streamflow peak.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
OAKLEY RESV INFLOW	MAY-JUL	2.8	4.5	5.9	28	7.5	10.2	21
	MAY-SEP	3.4	5.2	6.7	28	8.4	11.1	24
OAKLEY RESV STORAGE	MAY-31	15.2	18.1	20	44	22	25	45
	JUN-30	6.7	11.2	14.3	36	17.4	22	40
SALMON FALLS CREEK nr San Jacinto	MAY-JUL	14.6	17.8	20	35	26	36	57
	MAY-SEP	16.6	19.8	22	36	28	38	62
SALMON FALLS RESV STORAGE	MAY-31	32	38	43	43	48	54	101
	JUL-31	9.2	11.2	12.6	18	20	32	71
BRUNEAU near Hot Spring	MAY-JUL	29	44	57	35	71	95	162
	MAY-SEP	31	47	60	35	75	99	173
OWYHEE near Gold Creek (2)	MAY-JUL	0.2	1.7	3.5	29	6.0	10.8	12.0
	MAY-SEP	0.2	1.6	3.4	32	5.8	10.4	10.7
OWYHEE nr Owyhee (2)	MAY-JUL	9.5	15.4	19.4	39	29	45	50
OWYHEE near Rome	MAY-JUL	26	52	75	36	102	149	210
	MAY-SEP	32	59	83	36	111	159	230
OWYHEE RESV INFLOW (2)	MAY-JUL	34	61	85	38	112	160	225
	MAY-SEP	42	72	96	38	124	172	255
SUCCOR CK nr Jordan Valley	MAY-JUL	0.88	1.73	2.30	32	4.10	6.70	7.10
SNAKE RIVER at King Hill (1,2)	MAY-JUL	336	944	1220	60	1495	2105	2040
SNAKE RIVER near Murphy (1,2)	MAY-JUL	345	988	1280	60	1570	2215	2150
SNAKE RIVER at Weiser (1,2)	MAY-JUL	1022	1289	1470	37	1960	3040	3980
SNAKE RIVER at Hells Canyon Dam (1,2	MAY-JUL	1152	1449	1650	37	2195	3390	4520
SNAKE blw Lower Granite Dam (1,2)	MAY-JUL	6240	8502	9530	57	10560	12820	16700
	MAY-SEP	7395	10012	11200	58	12390	15000	19300

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	74.5	20.1	19.1	41.0
SALMON FALLS	182.6	41.1	24.6	87.9
WILDHORSE RESERVOIR	71.5	28.0	26.8	55.8
OWYHEE	715.0	416.6	214.8	613.6
BROWNLEE	1419.3	1327.9	1285.4	1069.2

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - May 1, 2004

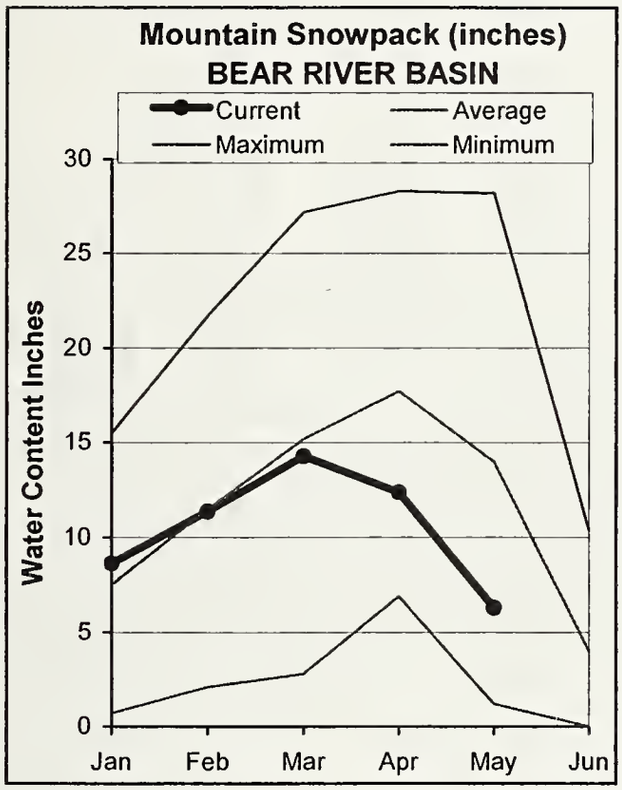
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	1	127	82
Goose-Trapper Creeks	4	122	60
Salmon Falls Creek	7	70	56
Bruneau River	5	60	52
Owyhee Basin Total	7	54	35

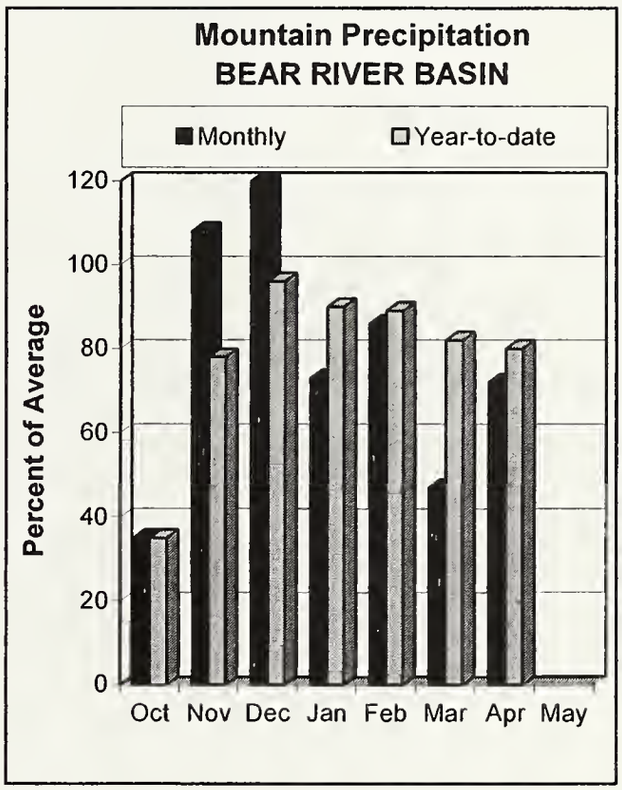
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

BEAR RIVER BASIN
MAY 1, 2004





WATER SUPPLY OUTLOOK

April precipitation continued the below average precipitation with four months of below average amounts. April precipitation was 72% of average. Water year to date precipitation is 80% of average, surprisingly slightly better than last year. Snowpacks range from a high of 66% of average in Montpelier Creek to 29% in Mink Creek. Overall, the Bear River basin is 45% of average and has less snow than last year. Streamflow in the Bear River has peaked for the season. April flow at Bear River near Stewart Dam was 9,400 acre-feet, 20% of average. However, Bear Lake storage rose 40,000 acre-feet in April due mostly to subsurface flows. Residual streamflows for Bear River at Stewart Dam are for 4% of average, basically the same as last year. Bear Lake is now 16% of capacity, 23% of average and will run out of useable water in early July. Montpelier Reservoir is only 55% full, the same as in April 2001. Smith Fork is forecast at 46% of average. Water users should be prepared for more severe shortages than last year as there is 175,000 acre-feet less water in Bear Lake this year when compared to a year ago.

BEAR RIVER BASIN
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear River nr UT-WY State Line	APR-SEP	42	51	58	46	65	74	125
	MAY-SEP	33	42	49	41	56	65	119
Bear River ab Reservoir nr Woodruff	APR-SEP	26	31	34	24	47	65	142
Smiths Fork nr Border	APR-JUL	39	44	47	46	50	55	103
	APR-SEP	46	52	56	46	60	66	121
	MAY-JUL	29	34	37	39	40	45	95
Bear River at Stewart Dam	APR-JUL	7.0	12.0	17.0	7	44	82	234
	APR-SEP	8.0	13.0	18.0	7	50	92	262
	MAY-JUL	6.0	7.0	8.0	4	30	61	186
	MAY-SEP	6.0	8.0	9.0	4	33	69	214

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	220.4	396.7	971.0
MONTPELIER CREEK	4.0	2.2	2.9	2.5

BEAR RIVER BASIN
Watershed Snowpack Analysis - May 1, 2004

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	4	82	60
Bear River ab WY-ID line	13	98	48
Montpelier Creek	2	91	66
Mink Creek	1	82	29
Cub River	1	79	51
Bear River ab ID-UT line	20	93	45
Malad River	1	0	0

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Streamflow Adjustment List For All Forecasts Published In Idaho Basin Outlook Report Streamflow forecasts are projections of runoff volumes that would have occurred naturally without influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report. (Revised 12/2000).

Panhandle River Basins

KOOTENAI R AT LEONIA, ID
+ LAKE KOOCANUSA (STORAGE CHANGE)
BOUNDARY CREEK NEAR PORTHILL, ID – No Corrections
MOYIE RIVER AT EASTPORT, ID – No Corrections
SMITH CREEK NEAR PORTHILL, ID – No Corrections
CLARK FORK AT WHITEHORSE RAPIDS, ID
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS RESV (STORAGE CHANGE)
PEND OREILLE LAKE INFLOW, ID
+ PEND OREILLE R AT NEWPORT, WA
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS (STORAGE CHANGE
+ PEND OREILLE LAKE (STORAGE CHANGE)
+ PRIEST LAKE (STORAGE CHANGE)
PRIEST R NR PRIEST R, ID
+ PRIEST LAKE (STORAGE CHANGE)
COEUR D'ALENE R AT ENAVILLE, ID - No Corrections
ST. JOE R AT CALDER, ID - No Corrections
SPOKANE R NR POST FALLS, ID
+ COEUR D'ALENE LAKE (STORAGE CHANGE)
SPOKANE R AT LONG LAKE, WA
+ COEUR D'ALENE LAKE (STORAGE CHANGE)
+ LONG LAKE, WA (STORAGE CHANGE)

Clearwater River Basin

DWORSHAK RESERVOIR INFLOW, ID
+ DWORSHAK RESV (STORAGE CHANGE)
- CLEARWATER R AT OROFINO, ID
+ CLEARWATER R NR PECK, ID
LOCHSA RIVER NR LOWELL - No Corrections
SELWAY RIVER NR LOWELL - No Corrections
CLEARWATER R AT OROFINO, ID - No Corrections
CLEARWATER R AT SPALDING, ID
+ DWORSHAK RESV (STORAGE CHANGE)

Salmon River Basin

SALMON R AT SALMON, ID - No Corrections
SALMON R AT WHITE BIRD, ID - No Corrections

Weiser, Payette, Boise River Basins

WEISER R NR WEISER, ID - No Corrections
SF PAYETTE R AT LOWMAN, ID - No Corrections
DEADWOOD RESERVOIR INFLOW, ID
+ DEADWOOD R BLW DEADWOOD RESV NR LOWMAN
+ DEADWOOD RESV (STORAGE CHANGE)
LAKE FORK PAYETTE RIVER NR MCCALL, ID – No Corrections
NF PAYETTE R AT CASCADE, ID
+ CASCADE RESV (STORAGE CHANGE)

NF PAYETTE R NR BANKS, ID
+ CASCADE RESV (STORAGE CHANGE)
PAYETTE R NR HORSESHOE BEND, ID
+ DEADWOOD RESV (STORAGE CHANGE)
+ CASCADE RESV (STORAGE CHANGE)
BOISE R NR TWIN SPRINGS, ID - No Corrections
SF BOISE R AT ANDERSON RANCH DAM, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)
BOISE R NR BOISE, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)
+ ARROWROCK RESV (STORAGE CHANGE)
+ LUCKY PEAK RESV (STORAGE CHANGE)

Wood and Lost River Basins

BIG WOOD R AT HAILEY, ID - No Corrections
BIG WOOD R NR BELLEVUE, ID - No Corrections
CAMAS CREEK NEAR BLAINE – No Corrections
BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID
+ MAGIC RESV (STORAGE CHANGE)
LITTLE WOOD R NR CAREY, ID
+ LITTLE WOOD RESV (STORAGE CHANGE)
BIG LOST R AT HOWELL RANCH NR CHILLY, ID - No Corrections
BIG LOST R BLW MACKAY RESV NR MACKAY, ID
+ MACKAY RESV (STORAGE CHANGE)
LITTLE LOST R BLW WET CK NR HOWE, ID - No Corrections

Upper Snake River Basin

HENRYS FORK NR ASHTON, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)
HENRYS FORK NR REXBURG, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)
+ DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID
+ DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG, ID
+ GRASSY LAKE (STORAGE CHANGE)
FALLS R ABV YELLOWSTONE CANAL NR SQUIRREL, ID
+ GRASSY LAKE (STORAGE CHANGE)
TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections
TETON R NR ST. ANTHONY, ID
- CROSS CUT CANAL
+ SUM OF DIVERSIONS ABV GAGE
SNAKE R NR MORAN, WY
+ JACKSON LAKE (STORAGE CHANGE)
PALISADES RESERVOIR INFLOW, ID
+ SNAKE R NR IRWIN, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

SNAKE R NR HEISE, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)
BLACKFOOT RESVERVOIR INFLOW, ID
+ BLACKFOOT RIVER

+ BLACKFOOT RESERVOIR (STORAGE CHANGE
SNAKE R NR BLACKFOOT, ID
+ PALISADES RESV (STORAGE CHANGE)
+ JACKSON LAKE (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT, ID
PORTNEUF R AT TOPAZ, ID - No Corrections
AMERICAN FALLS RESERVOIR INFLOW, ID
+ SNAKE RIVER AT NEELEY
+ ALL CORRECTIONS MADE FOR HENRYS FK NR REXBURG, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT GAGES

Southside Snake River Basins

OAKLEY RESERVOIR INFLOW, ID
+ GOOSE CK ABV TRAPPER CK NR OAKLEY, ID
+ TRAPPER CK NR OAKLEY, ID
SALMON FALLS CK NR SAN JACINTO, NV - No Corrections
BRUNEAU R NR HOT SPRINGS, ID - No Corrections
OWYHEE R NR GOLD CK, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR OWYHEE, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR ROME, OR – No Corrections
OWYHEE RESERVOIR INFLOW, OR
+ OWYHEE R BLW OWYHEE DAM, OR
+ OWYHEE RESV (STORAGE CHANGE)
+ DIV TO NORTH AND SOUTH CANALS
SUCCOR CK NR JORDAN VALLEY, OR - No Corrections
SNAKE R - KING HILL, ID - No Corrections
SNAKE R NR MURPHY, ID - No Corrections
SNAKE R AT WEISER, ID - No Corrections
SNAKE R AT HELLS CANYON DAM, ID
+ BROWNLEE RESV (STORAGE CHANGE)

Bear River Basin

BEAR R NR RANDOLPH, UT
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
SMITHS FORK NR BORDER, WY - No Corrections
THOMAS FORK NR WY-ID STATELINE - No Corrections (Disc)
BEAR R BLW STEWART DAM, ID
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
+ DINGLE INLET CANAL
+ RAINBOW INLET CANAL

MONTPELIER CK AT IRR WEIR NR MONTPELIER, ID (Disc)
+ MONTPELIER CK RESV (STORAGE CHANGE)
CUB R NR PRESTON, ID - No Corrections

RESERVOIR CAPACITY DEFINITIONS (Units in 1,000 acre-feet, KAF)

Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. This table lists these volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage. (Revised January 2002)

BASIN/ RESERVOIR	DEAD STORAGE	INACTIVE STORAGE	ACTIVE STORAGE	SURCHARGE STORAGE	NRCS CAPACITY	NRCS CAPACITY INCLUDES
PANHANDLE REGION						
HUNGRY HORSE	39.73	--	3451.00	--	3451.0	ACTIVE
FLATHEAD LAKE	Unknown	--	1791.00	--	1971.0	ACTIVE
NOXON RAPIDS	Unknown	--	335.00	--	335.0	ACTIVE
PEND OREILLE	406.20	112.40	1042.70	--	1561.3	DEAD+INACTIVE+ACTIVE
COEUR D'ALENE	--	13.50	225.00	--	238.5	INACTIVE+ACTIVE
PRIEST LAKE	20.00	28.00	71.30	--	119.3	DEAD+INACTIVE+ACTIVE
CLEARWATER BASIN						
DWORSHAK	--	1452.00	2016.00	--	3468.0	INACTIVE+ACTIVE
WEISER/BOISE/PAYETTE BASINS						
MANN CREEK	1.61	0.24	11.10	--	11.1	ACTIVE
CASCADE	--	46.70	646.50	--	693.2	INACTIVE+ACTIVE
DEADWOOD	--	--	164.00	--	164.0	ACTIVE
ANDERSON RANCH	24.90	37.00	413.10	--	450.1	INACTIVE+ACTIVE
ARROWROCK	--	--	272.20	--	272.2	ACTIVE
LUCKY PEAK	--	28.80	264.40	13.80	293.2	INACTIVE+ACTIVE
LAKE LOWELL	7.90	5.80	159.40	--	165.2	INACTIVE+ACTIVE
WOOD/LOST BASINS						
MAGIC	--	--	191.50	--	191.5	ACTIVE
LITTLE WOOD	--	--	30.00	--	30.0	ACTIVE
MACKAY	0.13	--	44.37	--	44.4	ACTIVE
UPPER SNAKE BASIN						
HENRYS LAKE	--	--	90.40	--	90.4	ACTIVE
ISLAND PARK	0.40	--	127.30	7.90	135.2	ACTIVE+SURCHARGE
GRASSY LAKE	--	--	15.18	--	15.2	ACTIVE
JACKSON LAKE	--	--	847.00	--	847.0	ACTIVE
PALISADES	44.10	155.50	1200.00	--	1400.0	DEAD+INACTIVE+ACTIVE
RIRIE	4.00	6.00	80.54	10.00	80.5	ACTIVE
BLACKFOOT	--	--	348.73	--	348.7	ACTIVE
AMERICAN FALLS	--	--	1672.60	--	1672.6	ACTIVE
SOUTHSIDE SNAKE BASINS						
OAKLEY	--	--	74.50	--	74.5	ACTIVE
SALMON FALLS	48.00	--	182.65	--	182.6	ACTIVE
WILDHORSE	--	--	71.50	--	71.5	ACTIVE
OWYHEE	406.83	--	715.00	--	715.0	ACTIVE
BROWNLEE	0.45	444.00	975.30	--	1419.3	INACTIVE+ACTIVE
BEAR RIVER BASIN						
WOODRUFF NARROWS	--	1.50	57.30	--	57.3	ACTIVE
WOODRUFF CREEK	--	4.00	4.00	--	4.0	ACTIVE
BEAR LAKE	--	--	1421.00	--	1421.0	ACTIVE
MONTPELIER CREEK	0.21	--	3.84	--	4.0	DEAD+ACTIVE

Interpreting Streamflow Forecasts

Introduction
Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflovv forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

Most Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations, There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast; it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

To Decrease the Chance of Having Too Little Water
If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value.
There is a 30 percent chance the streamflow volume will be less than this forecast value.
90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value.
There is a 10 percent chance the streamflow volume will be less than this forecast value.

To Decrease the Chance of Having Too Much Water
If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.
10 Percent Chance of Exceeding Forecast. there is a 10 percent chance that the streamflow volumc will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

Using the forecasts - an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Death between March I and July 31.

Using the Higher Exceedence Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three Out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	

For more information concerning streamflow forecasting ask your local NRCS field office for a copy of "A Field *Office Guide* for *Interpreting Streamflow Forecasts" or visit our Web page.*

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